Request For Information
DE-PS36-08GO38009

Program Manager / Area: Jacques Beaudry-Losique, Program Manager, Office of Biomass Program, Energy Efficiency & Renewable Energy (EERE).

Information Requested on: Development of Supply Systems to Handle and Deliver High Volume Biomass Feedstocks for Cellulosic Biofuels Production

Description: The U.S. Department of Energy (DOE) is seeking input from industry, academia, and other biofuels stakeholders regarding supply systems used for the handling, transport and delivery of high volume biomass feedstocks for cellulosic biofuels production. The information will be used by DOE for internal planning and decision making purposes relative to directing DOE funding to support supply systems development. This area is considered extremely important to the biofuels 2022 goals for the Biomass Program under the Energy Independence and Security Act.

Purpose:

The DOE plans to support the continued increase of sustainably produced domestic biofuels from cellulosic feedstocks, such as, agricultural residues, energy crops, forest resources, and sorted municipal waste, (e.g. stems, stalks, bagasse, switchgrass, miscanthus, energycane, sorghum, poplar, willow, forest thinnings, wood chips, wood wastes, small diameter trees). This Request For Information (RFI) provides agri-forest businesses, industrial equipment manufacturers, growers, universities, national laboratories, researchers, freight handlers, transport specialists, biorefiners and other interested stakeholders with an opportunity to provide their view of requirements necessary to modify or create equipment and logistics systems capable of supporting a rapid increase in the volume of **cellulosic** biofuels sustainably produced in the United States.

Information obtained is meant to be used by DOE on a non-attribution basis for program planning and procurement strategy development. The DOE may determine as the result of this RFI to issue a formal Funding Opportunity Announcement (FOA) for this area.

Request for Information Guidelines:

DOE will not pay for information provided under this RFI and there is no guarantee that a project will be supported as a result of this RFI. This RFI is not accepting applications for financial assistance or financial incentives. Response to the RFI will not be viewed as a binding commitment for the respondent to develop or pursue the project or ideas discussed. DOE may decide at a later date to issue a Funding Opportunity Announcement (FOA), based on consideration of the input received from this RFI.

Need of the Government for Information:

The information sought under this RFI will be used to identify barriers to high volume sustainable feedstock production and handling. Recommendations for identified barriers will be considered, including but not limited to; equipment, sustainability factors, common practices, and financing needs. The purpose of this RFI is solely to solicit input for DOE consideration in the development of future programs which will support sustainable cellulosic biofuels production in high volumes within the United States.

Please provide information pertaining to the developmental and logistics needs in support of obtaining high volume sustainable **cellulosic** biomass feedstocks for use by a future biofuels and bioproducts industry. If there are other issues which would have an impact on high volume biofuels production, please include them as well.

Below is a list of topics to consider:

- What minimum volume of feedstock do you expect would be required for a viable commercial size plant? Please give quantity linked to facility configuration: i.e. minimum tons/day to support a small commercial plant.

- Discuss the processes or stages needed from harvest through arrival at the biorefinery, including harvest, handling, transport, preprocessing and storage of anticipated volumes of non-food biofuels crops.

- If current available systems and equipment are not adequate for high volume cellulosic biofuels production, which components should be considered for redesign? Which do you consider critical to successful rapid volumetric increases for the sustainable cellulosic biofuels industry? Please discuss any additional barriers which need to be addressed in system handling development.

- If you were an Original Equipment Manufacturer (OEM), could existing harvest and handling equipment be combined or adapted to serve the needs of high volume cellulosic fuel production? What would you consider a reasonable timeframe to design and demonstrate such a system? What would be a reasonable cost? What is the basis for cost estimates?

- Would a partnership between equipment manufacturers and research facilities be beneficial to design or redesign feedstocks handling systems? Please explain the reasoning which supports your response to the previous question.

- What types of organizations could provide the optimal partnership to produce the best feedstocks logistics systems? OEMs, land grant universities, research organizations, growers, biorefineries, fuel producers, and transport companies are all potential partners. Discuss reasons for partnering with these or other entities.

- Discuss cost barriers to the design and production of suggested feedstocks handling systems. What would you consider a reasonable split of costs between the developer and DOE?

- Discuss the types and level of expertise which would be required to create feedstock systems which will address the current barriers to rapid increase of cellulosic biofuels production.

- To supply a future biofuels and bioproducts industry, DOE envisions biomass logistics systems that supply uniform and consistent feedstocks to biorefineries from a variety of sources. Do you agree with this vision and if so, what system or equipment developments would be required to provide such feedstocks?

- If you are or expect to be a biorefinery operator, what is a reasonable cost range for a delivered feedstock that meets the requirements of your process? What are the preferred feedstock form, size and composition (e.g. pellets, loose, ¼" minus grind, moisture content, density specification, acceptable contaminant levels, flowability etc.)?

- If you are or expect to be a biomass producer, what are the financial and yield considerations that will be important to you? e.g. What dollar value per ton would be required based on anticipated land planted? What $/acre return would motivate a switch to energy crops? What yield per acre of energy crop or agriculture residue do you anticipate would be required?

- What process steps do you envision for the entire logistic chain from feedstock production through introduction to the conversion process? Do processes, equipment and infrastructure exist to support this chain?

- What systems or techniques do you envision may be required to store biomass to buffer periods when harvest is not possible? Are adequate systems and infrastructure in place to implement these systems? What additional research or developments may be required to implement these systems?

- How might envisioned future logistics systems impact communities? What transportation/storage systems might be implemented to mitigate these impacts?

- If you are currently transporting low-density materials, would you consider transporting cellulosic biomass feedstocks (wood chips, hay, stover, straw, municipal solid waste, etc)? What price per ton-mile would motivate you to enter this market? Is there another pricing mechanism that should be considered? Is currently available transport machinery adequate or appropriate for this task?

- If collection of biomass is performed with harvesting machines with an associated suite of support machines (e.g., for field transport and packaging), could scale-up be accomplished by multiplying the number of these machine sets? Please discuss basis for your answer to the previous question.

- Are there additional issues which should be considered by DOE?

Respondents are requested to include the following information in their submission of comments in response to this RFI: Company/institutional name, company/institutional contact, address, phone number, e-mail address and type of business or institution.

Comments in response to this RFI should be submitted in Microsoft Word or PDF format to feedstocksystems@go.doe.gov by 8:00 PM Eastern Daylight Savings Time on September 19, 2008. DOE would prefer that responses to this RFI be no more than 20 pages in length. Questions regarding the content of and response to this RFI should be submitted through the "Submit Questions" feature of the DOE Interactive Procurement System (IIPS) at http://e-center.doe.gov.

In order to avoid any possible conflict with future funding opportunities, the Department does not intend to respond to those who submit input or give any feedback on any decision made based on the input received. The Department thanks you for your assistance and input.